

Index to the Records of occasional Observations and Calculations made at the Royal Observatory, Greenwich, and to other miscellaneous Papers connected with that Institution, not comprehended in the ordinary routine of the Observatory, but printed in the Annual Volumes of the Greenwich Observations, from 1836, January, to 1875, December; with List of other Publications of the Royal Observatory.

List of Subjects of the Papers.

- I. Regulations of the Royal Observatory.
- II. Plans of the Buildings and Grounds.
- III. Descriptions of Instruments.
- IV. Auxiliary Tables and New Methods.
- V. Results of Earlier Observations.
- VI. Catalogues of Principal Stars.
- VII. Observations with the Water-Telescope.
- VIII. Measures of Double Stars with the Double-image Micrometer.
- IX. Observations for a Star's Proper Motion and Parallax.
- X. Variations of Brightness and Spectroscopy of Stars.
- XI. Micrometric Observations of Solar Eclipses, with complete Reductions.
- XII. Observations of Lunar Eclipses.
- XIII. Comparisons of Lunar Tables with Observations.
- XIV. Extra-meridional Transits of the Moon for Measure of Diameter.
- XV. Deduction of the Moon's Diameter from observed Occultations.
- XVI. Lunar Theory.
- XVII. Reduction of Ancient Observations of Planets.
- XVIII. Corrections of the Orbital Elements in the Tables of *Jupiter* and *Saturn*.
- XIX. Transits of *Mercury* over the Sun's Disk.
- XX. Equatoreal Observations of *Mars*, East and West of Meridian, for Solar Parallax.
- XXI. Occultations of Planets by the Moon.
- XXII. Comparisons of the Places of Planets with those of neighbouring Stars, by Equatoreal.
- XXIII. Measures of the Diameters of Planets and of *Saturn's* Ring, with the Double-image Micrometer.
- XXIV. Remarks on the Surfaces of Planets.
- XXV. Measures of the Positions of Satellites relative to their Primaries.
- XXVI. Equatoreal Comparisons of the Places of Comets with Stars, and Remarks on the Appearance of Comets.
- XXVII. Operations for Terrestrial Longitude.
- XXVIII. Ancient Magnetic Observations.
- XXIX. Lithographic Copies of Photographic Records made by Magnetical and Meteorological Instruments.
- XXX. Reductions of Modern Magnetic Observations.
- XXXI. Barometric Variations.
- XXXII. Observations of Thermometers sunk deep in the ground.
- XXXIII. Observations of an Earthquake.

The following account of the routine system of the Royal Observatory, commencing from 1836, may be conveniently premised to the Index.

The meridional astronomical observations were made from 1836 to 1850, with Troughton's Transit and Troughton's and

Q Q

Jones's Circles; and from the beginning of 1851 with the Transit-Circle.

The observations of γ *Draconis* were made with Troughton's Zenith-Tube from 1836 to 1848, and with the Reflex Zenith-Tube from 1851 (first printed in the volume for 1852).

The Altazimuth observations began in May 1847. Observations with the South-east Equatoreal began in 1860.

Meridional and Altazimuth observations, occultations of stars, &c. by the Moon, and phenomena of *Jupiter's* satellites, are completely reduced as far as possible; each in the volume of *Observations* for its year.

The magnetical and meteorological observations from 1843 to 1847 were printed in separate annual volumes. From 1848 they are printed (in a less extended form) in the *Greenwich Observations*.

Reports on trials of chronometers began in 1841.

Reports to the Board of Visitors began in 1836, and were first printed in the *Observations* 1838.

INDEX.

Volume of
Greenwich
Observations.

Subject of the Papers &c.

I.—REGULATIONS OF THE ROYAL OBSERVATORY.

- 1852. First edition of the Regulations.
- 1873. Second edition of the Regulations.

II.—PLANS OF THE BUILDINGS AND GROUNDS.

- 1845. First Plan.
- 1862. Second Plan.

III.—DESCRIPTIONS OF INSTRUMENTS.

- ... (The description and the theory of the double-image micrometer are given: for the first form, in the Royal Astronomical Society's *Memoirs*, volume xv., 1845; and for the second or Valz's form, in the *Monthly Notices*, 1850, June 14.)
- 1847. (Introduction). Description of the Altazimuth.
- 1852. Description of the Transit-Circle.
- 1854. Description of the Reflex Zenith-Tube.
- 1856. Description of the Chronograph.
- 1867. Description of the Altazimuth. (Reprint.)
- 1867. Description of the Transit-Circle. (Reprint.)
- 1868. Description of the Great Equatoreal.

IV.—AUXILIARY TABLES AND NEW METHODS.

- 1836. Bessel's Refraction Tables, in altered form.
- 1836. Factors for converting Errors of R.A. and N.P.D. into Errors of Longitude and E. N.P.D.
- 1837. Logarithms of Sines and Cosines to every ten seconds of time through the twenty-four hours.
- 1837. Tables for converting Sidereal Time into Mean Solar Time.
- ... (The method of computing star corrections without use of algebraic signs is given in the Royal Astronomical Society's *Memoirs*, vol. xvi., 1847.)

Vol. of G.O.

1847. Repetition of the method above mentioned.
 1847. Day numbers for the application of that method, from 1849 to 1860.
 (For subsequent years these numbers are given in the *Nautical Almanac*.)
 1853. Bessel's Refraction Tables, modified and expanded.
 1854. Factors for converting Errors of Azimuth and Zenith Distance into Errors of R.A. and N.P.D.
 ... (The method of computing interpolations to the second order without changes of algebraic signs is given in the *Monthly Notices*, 1866, April 13.)

V.—RESULTS OF EARLIER OBSERVATIONS.

1851. Results of the observations of the principal stars made and reduced by Dr. Maskelyne: including determinations of the Equinoxes, of the R.A. of the principal stars, of the Z.D. of γ *Draconis* with Zenith Sector and Quadrant, and of other principal stars with Quadrant, 1765 to 1811. (From Dr. Maskelyne's manuscripts.)

VI.—CATALOGUES OF PRINCIPAL STARS.

1842. Catalogue of 1439 stars for 1840.
 1847. Catalogue of 2156 stars for 1840 and for 1845. (Twelve-year Catalogue.)
 1854. Catalogue of 1576 stars for 1850. (Six-year Catalogue.)
 1856. Corrections of Secular Variations in the two last-mentioned Catalogues.
 1862. Catalogue of 2022 stars for 1860. (First Seven-year Catalogue.)
 1868. Catalogue of 2760 stars for 1864. (Second Seven-year Catalogue.)

VII.—OBSERVATIONS WITH THE WATER-TELESCOPE.

1871. Observations of Z.D. of γ *Draconis* with the Water-Telescope.
 1872. Observations of Z.D. of γ *Draconis* with the Water-Telescope.

VIII.—MEASURES OF DOUBLE STARS WITH THE DOUBLE-IMAGE MICROMETER.

1840. Measures of distances and position-angles of 27 circumpolar double stars (with the view of remarking any exhibition of difference of annual parallax).
 1842. Measures &c. of 3 double stars.
 1843. Measures &c. of 2 double stars.
 1844. Measures &c. of 3 double stars.
 1846. Three measures
 1847. Two measures
 1848. Two measures
 1849. Three measures
 1850. Four measures
 1851. Three measures
 1852. Three measures
 1853. Two measures
 1855. Two measures
 1856. Five measures
 1858. Two measures
 1859. One measure
- } of γ *Virginis*.

IX.—OBSERVATIONS FOR STAR'S PROPER MOTION AND PARALLAX.

1847. Comparisons in R.A. and N.P.D. of Groombridge 1830 with a neighbouring star, made with N.E. Equatoreal.

Q Q 2

X.—VARIATION OF BRIGHTNESS, AND SPECTROSCOPY, OF STARS.

Vol. of G.O.

- 1848. Remarks on a variable star in *Ophiuchus*.
- 1864. Micrometric measures of lines in the spectra of the Sun and several principal stars, made in 1863.

XI.—MICROMETRIC OBSERVATIONS OF SOLAR ECLIPSES, WITH COMPLETE REDUCTIONS.

- 1836. Observations &c. of the Solar Eclipse, 1836, May 15.
- 1845. Observations &c. of the Solar Eclipse, 1845, May 5.
- 1846. Observations &c. of the Solar Eclipse, 1846, April 25.
- 1858. Observations &c. of the Solar Eclipse, 1858, March 14–15.
- 1860. Observations &c. of the Solar Eclipse, 1860, July 18.
- 1870. Observations &c. of the Solar Eclipse, 1870, December 21–22.
- 1874. Observations &c. of the Solar Eclipse, 1874, October 9.
- 1875. Observations &c. of the Solar Eclipse, 1875, September 28–29.

XII.—OBSERVATIONS OF LUNAR ECLIPSES.

- 1838. (Introduction). Lunar Eclipses, 1837, April 20 and October 13.
- 1848. Observations of the Lunar Eclipses, 1848, March 19 and Sept. 12.
- 1856. Observations of the Lunar Eclipse, 1856, October 13.
- 1858. Observations of the Lunar Eclipse, 1858, February 27.
- 1860. Observations of the Lunar Eclipse, 1860, February 6.
- 1863. Observations of the Lunar Eclipse, 1863, June 1.

XIII.—COMPARISONS OF LUNAR TABLES WITH OBSERVATIONS.

- 1856. Results of Lunar Observations, with corrected parallax, 1852 to 1855. (In continuation of the Great Lunar Reductions.)
- 1859. Comparison of observed places of the Moon with Burckhardt's and Hansen's Tables, 1847 to 1858.

XIV.—EXTRA-MERIDIONAL TRANSITS OF THE MOON FOR MEASURE OF DIAMETER, COMPARED WITH BURCKHARDT'S DIAMETER.

(These Observations were made with the N.E. Equatoreal at the hour when the Moon was full in right ascension, with the telescope fixed in hour angle, in which state the duration of transit does not differ by $\frac{1}{20000}$ part from that on the meridian.)

- 1837. 27 transits on 2 days.
- 1838. 17 transits on 2 days.
- 1839. 33 transits on 4 days.
- 1840. 74 transits on 7 days.
- 1841. 10 transits on 1 day.
- 1842. 30 transits on 3 days.
- 1843. 13 transits on 2 days.
- 1844. 8 transits on 1 day.
- 1845. 17 transits on 3 days.
- 1846. 11 transits on 2 days.
- 1847. 13 transits on 2 days.
- 1848. 5 transits on 1 day.
- 1849. 8 transits on 2 days.
- 1850. 12 transits on 2 days.
- 1851. 6 transits on 1 day.

XV.—DEDUCTION OF THE MOON'S DIAMETER FROM OBSERVED OCCULTATIONS.

ol. of G.O.

1864. Deductions, by Hugh Breen, Esq., from reduced observations of Occultations of Stars at Cambridge and Greenwich, from 1830 to 1860.

XVI.—LUNAR THEORY.

1875. First part of Numerical Lunar Theory, by Sir G. B. Airy.

XVII.—REDUCTION OF ANCIENT OBSERVATIONS OF PLANETS.

1864. Complete reductions, by Hugh Breen, Esq., of all the observations of Planets made at the Royal Observatory from 1831 to 1835.

XVIII.—CORRECTIONS OF THE ORBITAL ELEMENTS IN THE TABLES OF JUPITER AND SATURN.

1868. Investigation, by Hugh Breen, Esq., of the Corrections of the Elements given by the reduced Greenwich Observations from 1750 to 1865.

XIX.—TRANSITS OF MERCURY OVER THE SUN'S DISK.

1845. Observations of the Transit of 1845, May 8.
1848. Observations of the Transit of 1848, November 8.
1868. Observations of the Transit of 1868, November 4.

XX.—EQUATOREAL OBSERVATIONS OF MARS, EAST AND WEST OF MERIDIAN, FOR SOLAR PARALLAX.

1862. Differential Observations of *Mars* and neighbouring stars, on both sides of the Meridian, from 1862, September 11 to October 24.

XXI.—OCCULTATIONS OF PLANETS BY THE MOON.

1854. Occultation of *Mars*, 1854, March 12.
1857. Occultation of *Jupiter*, 1857, January 2.

XXII.—COMPARISONS OF THE PLACES OF PLANETS WITH THOSE OF NEIGHBOURING STARS, BY EQUATOREAL.

1836. Comparisons of *Venus* and *Saturn* with stars.
1837. Comparisons of *Mars* with stars.
1838. Comparisons of *Jupiter* with a star.
1839. Comparisons of *Mars* with stars.
1840. Comparisons of *Mars* with stars.
1841. Comparisons of *Mars* with stars.
1843. Comparisons of *Mars* with stars.
1845. Comparisons of *Astræa* and *Mars* with stars.
1846. Comparisons of *Neptune* with stars.
1849. Comparisons of *Mars* with stars.

XXIII.—MEASURES OF THE DIAMETERS OF PLANETS AND OF SATURN'S RING, WITH DOUBLE-IMAGE MICROMETER.

1840. Measures of *Venus* (and her phases), *Jupiter*, *Saturn*.
1841. Measures of *Mercury*, *Venus*, *Mars*, *Jupiter*, *Saturn*.
1842. Measures of *Mars*, *Venus*, *Jupiter*, *Saturn*.
1843. Measures of *Venus*, *Mars*, *Jupiter* (with transits of *Saturn*),

Vol. of G.O.

- 1844. Measures of *Mercury, Venus, Jupiter.*
- 1845. Measures of *Mercury, Venus, Mars, Jupiter.*
- 1846. Measures of *Jupiter, Saturn, Neptune.*
- 1847. Measures of *Venus, Mars, Jupiter.*
- 1848. Measures of *Jupiter, Saturn, Uranus.*
- 1849. Measures of *Venus, Jupiter, Saturn.*
- 1851. Measures of *Jupiter.*
- 1852. Measures of *Venus, Mars, Saturn.*
- 1854. Measures of *Saturn.*
- 1855. Measures of *Saturn.*
- 1856. Measures of *Venus, Mars, Jupiter, Saturn* (and his rings).
- 1857. Measures of *Venus, Jupiter, Saturn.*
- 1858. Measures of *Mercury, Mars, Jupiter.*
- 1859. Measures of *Jupiter, Saturn.*
- 1860. Measures of *Jupiter, Saturn.*
- 1861. Measures of *Saturn.*

XXIV.—REMARKS ON THE SURFACES OF PLANETS.

- 1845. Examination of the Surface of *Mars.*
- 1848. Remarks on *Saturn.*

XXV.—MEASURES OF THE POSITIONS OF SATELLITES RELATIVE TO THEIR PRIMARIES.

- 1836. Transits of *Jupiter* and his 4th Satellite, terminating the series of Observations for the Mass of *Jupiter.*
- 1875. Micrometric measures of the Positions of *Saturn's* Satellites.

XXVI.—EQUATOREAL COMPARISONS OF THE PLACES OF COMETS WITH THOSE OF STARS, AND REMARKS ON THE APPEARANCE OF COMETS.

- 1838. Encke's Periodical Comet with stars, and remarks on its appearance (1838).
- 1839. Galle's first Comet (1840, I).
- 1840. Galle's second Comet (1840, II).
Bremicker's Comet (1840, IV).
- 1842. Encke's Periodical Comet (1842, I)
Laugier's Comet (1842, II).
- 1843. Appearance of the Great Comet (1843, I).
Mauvais' first Comet (1843, II).
Faye's Periodical Comet (1843, III).
- 1844. Mauvais' second Comet (1844, II).
De Vico's first (Periodical) Comet (1844, I).
- 1845. D'Arrest's Comet (1845, I).
Wilmot's Comet (1844, III).
De Vico's second Comet (1845, II).
Colla's Comet (1845, III).
Biela's Periodical Comet (1846, II).
- 1846. Brorsen's Periodical Comet (1846, III).
Brorsen's second Comet (1846, VII).
De Vico's third Comet (1846, I).
De Vico's fourth Comet (1846, IV).
De Vico's fifth Comet (1846, V).
- 1847. Hind's second Comet (1847, I).
- 1848. Encke's Periodical Comet (1848, II).
- 1852. Encke's Periodical Comet (1852, I).
- 1854. Second Comet of this year (1854, II).

1879MNRAS...39...505.
Vol. of G.O.

- 1857. Brorsen's Periodical Comet (1857, II).
- 1858. Appearance of Donati's Comet (1858, VI).
- 1861. Second or Great Comet (1861, II).
- 1873. Tempel's first Periodical Comet (1873, I).

XXVII.—OPERATIONS FOR TERRESTRIAL LONGITUDE.

- 1845. Determination of the Longitude of Valentia, by Transmission of Chronometers.
- 1862. Determination of the Longitude of Valentia, by Galvanic Signals.

XXVIII.—ANCIENT MAGNETIC OBSERVATIONS.

- 1869. Reprint of Halley's Magnetic Chart.

XXIX.—LITHOGRAPHIC COPIES OF PHOTOGRAPHIC RECORDS MADE BY MAGNETICAL AND METEOROLOGICAL INSTRUMENTS.

- 1872. Lithographed Copies of Photographic Records of Magnetic Declination, Horizontal Force, Vertical Force, and Earth Currents, for 1872, February 4.

XXX.—REDUCTIONS OF MODERN MAGNETIC OBSERVATIONS.

- 1859. Reduction of Magnetic Observations, 1848-1857, with reference to positions of Sun and Moon.
- 1862. Abstracts of the Magnetic Observations made on Days of Great Magnetic Disturbance, 1841-1857.
- 1867. Reduction of Magnetic Observations, 1858-1863, with reference to positions of Sun and Moon.

XXXI.—BAROMETRIC VARIATIONS.

- 1867. Diagram of Barometric Variations, 1867, October 26 to December 11.

XXXII.—OBSERVATIONS OF THERMOMETERS SUNK DEEP IN THE GROUND.

- 1860. Reduction by Professor Everett of the Observations of the Deep-sunk Thermometers, 1846-1859.

XXXIII.—OBSERVATIONS OF AN EARTHQUAKE.

- 1863. Observations of the Earthquake of 1863, October 5.

The following works have been issued from the Royal Observatory, but are not bound as Appendixes to the *Greenwich Observations* :—

- Eiffe and Molyneux on Chronometers.
- Groombridge's Catalogue of Stars.
- Planetary Reductions, 1750 to 1830.
- Lunar Reductions, 1750 to 1830 (two volumes).
- 1831 to 1851 (one volume).
- Reduction of Fallows' Observations at the Cape of Good Hope.
- Report on the Telescopic Observations of the Transit of *Venus*, 1874.
- Reduction of Greenwich Meteorological Observations, viz. :—
 - Barometer, 1854-1873;
 - Air and Moisture Thermometers, 1849-1868.
 - Earth Thermometers, 1847-1873.